Beam Flooring Systems

MEXBORO

THE CAST MASTERS

155 & 220 Beam Flooring Systems

Benefits

- **Minimum site preparation** - just remove topsoil and vegetation to provide a minimum 75mm void or 150mm for clay between underside of floor and ground surface.
- **No compaction or back-fill** - no ground-heave problems.
- **Construction** - can begin on delivery, whatever the weather conditions.
- **Speed of installation** - One man can lay 60 square metres in a day and is not adversely effected by bad weather.
- **Savings in foundations** - internal partition walls can often be carried by double or triple beams.
- **Improved heat and sound insulation**.
- **Accurate costings** - can be made from the design stage.
- ***Specify Mexboro 155** or **220** Beam floor as manufacturers' instructions, and Mexboro will accept full design responsibility supplying design layout drawings, technical details and calculations for Building Regulations approval.*
- **Early working Platforms** - when floor is laid and brush grouted it can be used as a working platform within its design limits. (Care must be taken to avoid overloading floor when blocking out).

Suppliers to:

Bovis Homes, Wimpey Homes, Cala Homes, Costain Homes, J. Mowlem Homes, Clarke Homes, Crest Homes.

Design of Beam

Beams generally have been designed in accordance with the Code of Practice BS 8110:1985, and are checked for compliance on each specific job undertaken.

Design of Infill Blocks

All infill Blocks must be able to satisfy a 3.5 N/mm^2 transverse load test.

Construction

Using a single block at each end, the beams are spaced as shown on the drawings. Slip tiles are bedded as required and the remainder of the infill blocks laid. A sand and cement grout mix is then brushed over the whole slab and worked well into the joints.

Finishes

Screed - a 50mm sand/cement screed over the basic construction gives the ideal surface for tiling etc.

Traditional - timber battens can be laid over the basic construction at appropriate centres as supports for standard T&G boarding or similar.

Insulated - for ground floors etc. 20mm expanded polystyrene sheets can be laid over the basic construction, taking account of the camber, then covered with a 1000g polythene vapour barrier and overlaid with T&G chipboard sheets.

Garage Floors - use a 50mm topping of Grade 30 Concrete using 10mm aggregate and incorporating a A98 or A142 MESH.

Fire Resistance

Without any applied ceiling finish the completed construction as described above (using a 1950kg/m^3 block) will provide for a one hour fire resistance. A suspended ceiling will improve this figure.

Sound Resistance

The basic construction has a minimum mass of 242kg/m^2 (using a 1950kg/m^3 block) with out any finishing screed. This rises to 365kg/m^2 using:

55mm screed on the 530/540 c/s system.
50mm screed on the 420/430 c/s system.
50mm screed on the 305/315 c/s system.
50mm screed on the 440/465 c/s system.
50mm screed on the 138/152 c/s system.

These values show the appropriate deemed to satisfy' floor construction to be chosen from the Building Regulations complying with Part II or Part III of Schedule 12 as required.

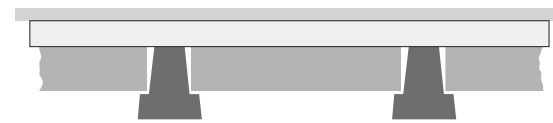
Camber

All pre-stressed concrete systems have an inherent upward camber along the length of the beams. Every effort is made to keep this to a minimum but it is difficult to control precisely. Suitable allowances should therefore be made in top and soffit finishes to accommodate this.

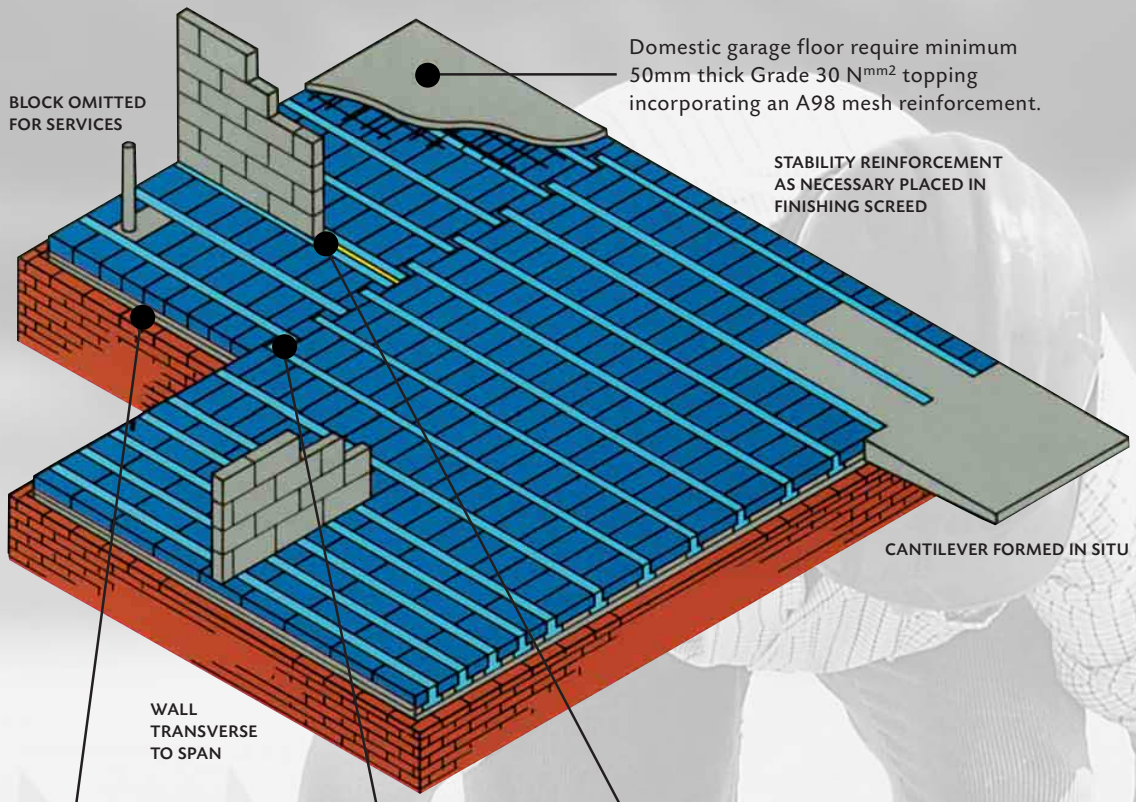
The sound and fire protection will be less for light weight blocks than dense blocks.
Light weight blocks are not suitable for garage or industrial applications.

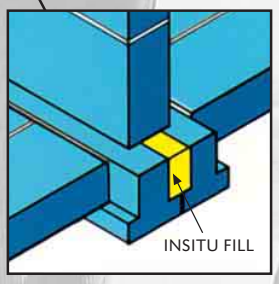
Mexboro Table of 'U' Values w/m^{2}k

Floor Construction - Finish: 18mm Chipboard on 25mm Polystyrene. Unit Load = 15kn/m^2

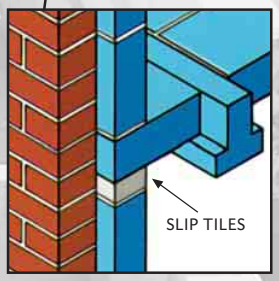


		Dense Block	Light Block
Thermal conductivity of Block 'k'		1w/m^{2}k	0.20w/m^{2}k
Dimension of floor	10 x 10m	0.35	0.31
	10 x 6m	0.46	0.39
	10 x 4m	0.51	0.42

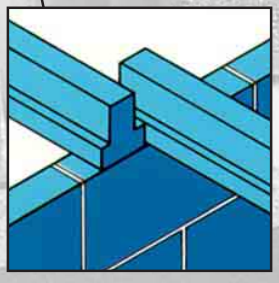




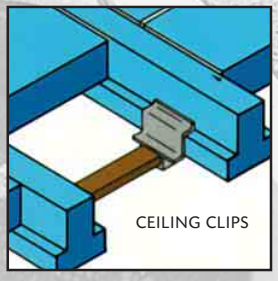
Beams placed side by side to support partition.



Block sits on bedded slip tile when built into inner leaf.



Beams stagger on internal wall.

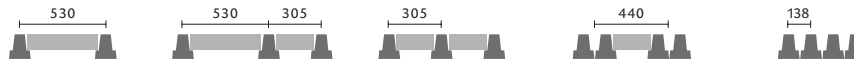


Ceiling clip support.

Full technical information is available from our technical and sales team.

Mexboro Standard Structural Concrete products can also be manufactured to your specified dimensions.

Mexboro **155**mm Floor Beam System



530 System	420 System	305 System	440 System	138 System

Safe Spans with 100mm 7n/mm² (1950 kg/m³) Dense Concrete Blocks (including 1.2 kn/m² for 50mm Screed Finishes)

System Weights		3.580	3.660	3.850	4.070	4.920
Super Imposed Load	1.5kn/m²	4.660	5.210	6.020	6.900	6.900
	2.0kn/m²	4.420	4.940	5.730	6.640	6.900
	2.5kn/m²	4.210	4.720	5.470	6.360	6.900
	3.0kn/m²	4.030	4.520	5.250	6.100	6.900
	3.5kn/m²	3.870	4.340	5.050	5.880	6.900
	4.0kn/m²	3.730	4.190	4.870	5.680	6.890
	5.0kn/m²	3.490	3.920	4.560	5.330	6.500
	7.5kn/m²	3.040	3.410	3.990	4.680	5.760
	10.0kn/m²	2.720	3.060	3.590	4.210	5.220
Garage *Domestic*		3.070	3.530	4.170	5.400	6.390

Safe Spans with 100mm 7n/mm² (1950 kg/m³) Dense Concrete Blocks (including 0.2 kn/m² for Polystyrene/Chipboard Floating Floor)

System Weights		2.580	2.660	2.850	3.070	3.920
Super Imposed Load	1.5kn/m²	5.180	5.780	6.650	6.900	6.900
	2.0kn/m²	4.860	5.430	6.270	6.900	6.900
	2.5kn/m²	4.590	5.140	5.940	6.880	6.900
	3.0kn/m²	4.360	4.880	5.660	6.570	6.900
	3.5kn/m²	4.170	4.670	5.410	6.290	6.900
	4.0kn/m²	3.990	4.470	5.200	6.050	6.900
	5.0kn/m²	3.700	4.150	4.830	5.630	6.840
	7.5kn/m²	3.180	3.570	4.170	4.880	5.990
	10.0kn/m²	2.820	3.170	3.720	4.360	5.390

Safe Spans with 100mm (650 kg/m³) Lightweight Infill Floor Blocks (including 1.2 kn/m² for 50mm Screed Finishes)

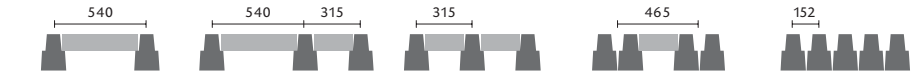
System Weights		2.500	2.640	2.910	3.440	4.920
Super Imposed Load	1.5kn/m²	5.230	5.790	6.610	6.900	6.900
	2.0kn/m²	4.900	5.440	6.230	6.900	6.900
	2.5kn/m²	4.630	5.140	5.910	6.670	6.900
	3.0kn/m²	4.390	4.890	5.630	6.380	6.900
	3.5kn/m²	4.190	4.670	5.390	6.130	6.900
	4.0kn/m²	4.010	4.480	5.170	5.900	6.890
	5.0kn/m²	3.720	4.150	4.810	5.510	6.500
	7.5kn/m²	3.190	3.570	4.160	4.800	5.760
	10.0kn/m²	2.830	3.180	3.710	4.300	5.220

Safe Spans with 100mm (650 kg/m³) Lightweight Infill Floor Blocks (including 0.2 kn/m² for Polystyrene/Chipboard Floating Floor)

System Weights		1.500	1.640	1.910	2.440	3.920
Super Imposed Load	1.5kn/m²	6.000	6.610	6.900	6.900	6.900
	2.0kn/m²	5.520	6.100	6.900	6.900	6.900
	2.5kn/m²	5.140	5.700	6.510	6.900	6.900
	3.0kn/m²	4.830	5.360	6.140	6.900	6.900
	3.5kn/m²	4.560	5.080	5.830	6.590	6.900
	4.0kn/m²	4.340	4.830	5.570	6.310	6.900
	5.0kn/m²	3.970	4.430	5.120	5.850	6.840
	7.5kn/m²	3.350	3.750	4.350	5.020	5.990
	10.0kn/m²	2.940	3.300	3.850	4.460	5.390

530 System 420 System 305 System 440 System 138 System

Mexboro **220**mm Floor Beam System



540 System	430 System	315 System	465 System	152 System

Safe Spans with 100mm 7n/mm² (1950 kg/m³) Dense Concrete Blocks (including 1.2 kn/m² for 50mm Screed Finishes)

System Weights		4.070	4.390	4.675	5.140	6.480
Super Imposed Load	1.5kn/m²	7.210	7.870	9.000	9.000	9.000
	2.0kn/m²	6.870	7.530	8.620	9.000	9.000
	2.5kn/m²	6.580	7.220	8.290	9.000	9.000
	3.0kn/m²	6.320	6.950	7.990	9.000	9.000
	3.5kn/m²	6.090	6.700	7.710	8.760	9.000
	4.0kn/m²	5.880	6.480	7.470	8.500	9.000
	5.0kn/m²	5.520	6.100	7.040	8.030	9.000
	7.5kn/m²	4.840	5.370	6.220	7.130	8.510
	10.0kn/m²	4.360	4.850	5.630	6.480	7.800
Garage *Domestic*		5.890	6.560	7.660	9.000	9.000

Safe Spans with 100mm 7n/mm² (1950 kg/m³) Dense Concrete Blocks (including 0.2 kn/m² for Polystyrene/Chipboard Floating Floor)

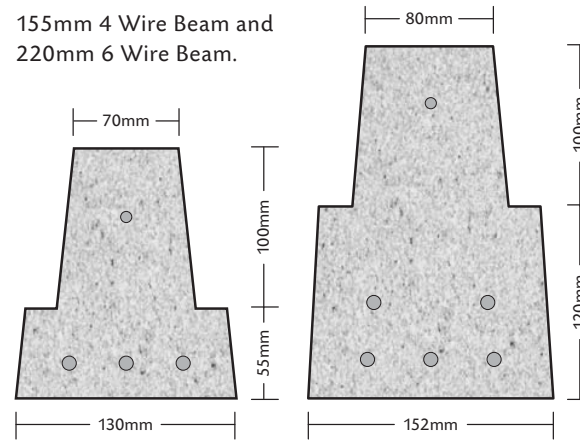
System Weights		3.070	3.390	3.675	4.140	5.480
Super Imposed Load	1.5kn/m²	7.940	8.620	9.000	9.000	9.000
	2.0kn/m²	7.500	8.170	9.000	9.000	9.000
	2.5kn/m²	7.120	7.780	8.910	9.000	9.000
	3.0kn/m²	6.800	7.440	8.540	9.000	9.000
	3.5kn/m²	6.510	7.150	8.210	9.000	9.000
	4.0kn/m²	6.260	6.880	7.910	8.980	9.000
	5.0kn/m²	5.830	6.430	7.410	8.430	9.000
	7.5kn/m²	5.050	5.590	6.480	7.410	8.810
	10.0kn/m²	4.520	5.020	5.820	6.690	8.030

540 System 430 System 315 System 465 System 152 System

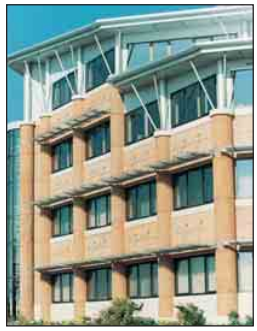
Mexboro Floor Beams

Beams are cast by the 'Longline' pre stressing method, using materials to appropriate British Standards: Cements to BS 12: 1978. Aggregates to BS 882: 1983, and Pre-stress Wire to BS 5896.

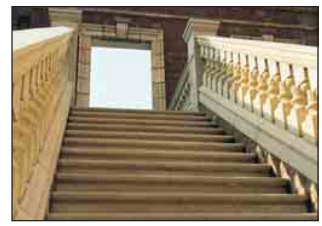
155mm 4 Wire Beam and
220mm 6 Wire Beam.



155mm **220mm**

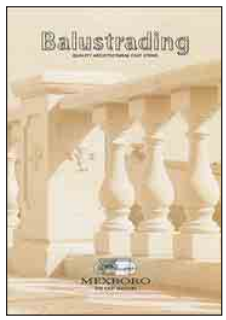


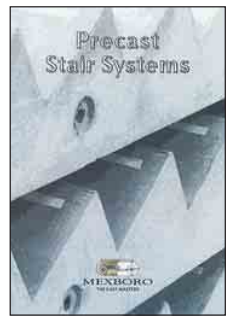


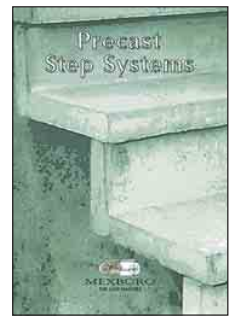


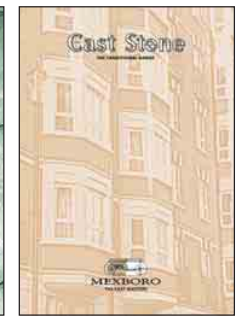
Talk to us about your projects and requirements.
Our technical and sales team will be happy to visit sites, supply quotations, and give structural and technical advice.

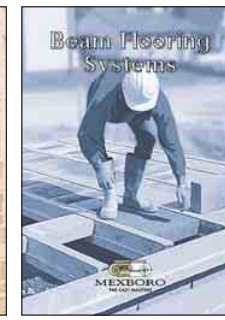
Other Products.
For further information or brochures on any of the following products please contact us or visit our website:
www.mexboroconcrete.co.uk











Structural

Beam & Block Flooring • Lintels • Staircases & Landings • Step & Riser Units • Ground Beams • Duct Covers • Retaining Walls • Frames, Columns & Beams • Bollards • Polished Face Units • Specialist Work

Architectural

Urns • Ball Finials • Coping & Pier Caps • Columns • Porticos • Door Surrounds • Quoin Stones • Window Cills & Surrounds • Gate Piers • Lintels & Gable Vents • Fireplace Surrounds • Plinth/String Courses • Faced 'Ashlar' Blockwork

For over thirty years Mexboro has specialized in the manufacture of high quality architectural cast stone and structural precast concrete and it is now one of the largest precast specialists in the South West of England.

Our portfolio of products spans the building industry from quality architectural stonework to precision structural concrete, and from individually designed one-off units to an extensive range of standard lines.

Mexboro is proud to have been associated with the supply of cast stone to numerous prestigious developments including projects for English Heritage, The National Trust, P.S.A. and the Ministry of Defence.

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